

POWER worksheets



The advent of a reliable power supply has certainly changed and improved our lives. Any visit to an appliance showroom is proof our uptake of devices that can be plugged in and turned on – everything from food processors to hair curlers, electric toothbrushes to Christmas lights.

All of this comes at a cost. The immediate cost we experience every time we get a power bill – a moment of pain that we accept as a normal part of life. However there is a hidden cost – that of loss of knowledge as to how to manage without power.

The attached worksheets perform two functions

- The first activity sheet gives us an opportunity to see behind the total figure on our power bills. Where is that power being used and at what cost? These sheets have been set up at the current power charge of .227c per kWhr and do not make allowance for off-peak supplies such as hot water. That information you can obtain direct from your power bill.
- The second activity sheet is designed to be a thought starter on replacement power sources to fulfil certain functions. Should we have extended periods of power shortage (or reduced power quality – brown outs) how could we service that need? For example:

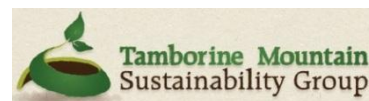
Appliance	A =Importance	B = Replacement	A x B	Cost/issues with replacement
Light bulbs	1	1	1	Candles – immediate – cheap Solar lights – charge during the day and bring inside at night
		2	2	
Air conditioner	5	5	25	Plan alternate methods of heating/cooling
Electric blankets	2	1	2	Hot water bottles!
Heaters	1 1 1	1	1	Snuggle blankets on the couch! Consider passive solar heating options Install a fuel burning heater
		5	5	
		3	3	
Water Pump	1	1	1	Make sure you have a tap on your tank outlet and a bucket. Gravity feed system – can you install a header tank? And a solar water pump?
		4	4	

Use the A (Importance) and B (Replacement) to build yourself an action plan.

1. In the 'Importance' column rate how difficult life it would be if you did not have this appliance. [Scale of 1 – 5 where 1 = most important and 5 = trivial]
2. Come up with ideas on how you could replace this function in the 'Cost/issues with replacement' column.
3. Rate the difficulty/cost of that idea in the '**Replacement' column [Scale of 1 – 5 where 1 = easiest, 5 = consider moving out!]

Multiple 'A' by 'B'. Start with the lowest numbers – these are things you can do tomorrow or next weekend to provide your family with a degree of power resilience. The higher number the bigger the task. Some of the really 'big numbers' will need collective thinking and intelligence....

UNDERSTANDING YOUR POWER BILL



Appliance	Power charge rate Watts	0.227 kWhr per Hour	Hrs/day	Cost/mnth	MY HOUSEHOLD
LIGHTING					
Fluro energy saver 10w	10	\$0.00227	6	\$0.41	
Fluro energy saver 15w	15	\$0.00341	6	\$0.61	
HEATING / COOLING					
Airconditioner (Typical living room)	3750	\$0.85125	2	\$51.08	
Airconditioner (reverse cycle - mid size-per month =200kW)				\$45.40	
Dehumidifier	785	\$0.17820	2	\$10.69	
Electric Blanket (double)	100	\$0.02270	2	\$1.36	
Electric Blanket (single)	60	\$0.01362	2	\$0.82	
Fan - ceiling	120	\$0.02724	2	\$1.63	
Fan - Floor	150	\$0.03405	2	\$2.04	
Heater	2400	\$0.54480	2	\$32.69	
FOOD / FOOD RELATED					
Coffee Maker	1050	\$0.23835	0.5	\$3.58	
Cooktop (one element in hob)	1800	\$0.40860	1	\$12.26	
Dishwasher	1800	\$0.40860	1	\$12.26	
Kettle (2 cups boiled once)	47	\$0.01067	4	\$1.28	
Microwave Oven (600w in use)	600	\$0.13620	1	\$4.09	
Microwave Oven (standby)	3	\$0.00068	23	\$0.47	
Oven (1hr@350 degrees)	2000	\$0.45400	1	\$13.62	
Freezer (chest 200-300l)= 37.5kW				\$8.51	
Fridge (3 star) - per month = 70kW				\$15.89	
Fridge (4.5 star) – p/month = 47.25kW				\$10.73	
Toaster Oven	1225	\$0.27808	1	\$8.34	
SERVICES					
Clothes Dryer	4000	\$0.90800	1	\$27.24	
Cordless phone	10	\$0.00227	24	\$1.63	
Effluent system (biocycle)*					
Hot water system*					
Vacuum cleaner	1220	\$0.27694	1	\$8.31	
Washing Machine	425	\$0.09648	1	\$2.89	
Water pump	675	\$0.15323	4	\$18.39	
OTHER					
Mobile phone (charging)	3	\$0.00068	6	\$0.12	
Iron	1400	\$0.31780	0.5	\$4.77	
Computer (desk top)	250	\$0.05675	1	\$1.70	
Computer (Laptop)	45	\$0.01022	1	\$0.31	
DVD	85	\$0.01930	1	\$0.58	
Hairdryer	1500	\$0.34050	0.5	\$5.11	
Stereo	400	\$0.09080	4	\$10.90	
Television (27")	113	\$0.02565	4	\$3.08	
Television (Flat screen)	120	\$0.02724	4	\$3.27	
Clock Radio (in use)	10	\$0.00227	2	\$0.14	
Clock Radio (standby)	2	\$0.00045	22	\$0.30	

The average household uses 63% of its overall power on heating/cooling and hot water.

RISK ASSESSMENT

A = How important are these appliances? 1=VITAL; 2=IMPORTANT; 3=WOULD BE NICE; 4=INCONVENIENT; 5=DON'T CARE

B = Can I replace this? 1=EASY -CAN DO IT TODAY; 2= CAN ADAPT AND REPLACE; 3=WILL NEED TO BUY/INSTALL ;4=NEEDS LARGER SCALE THINKING; 5=VERY DIFFICULT

Appliance	A	B	A x B	Cost/issue with replacement
LIGHTING				
Lightbulbs				
HEATING / COOLING				
Airconditioner				
Dehumidifier				
Electric blanket				
Fans				
Heater				
FOOD / FOOD RELATED				
Coffee Maker				
Cooktop				
Dishwasher				
Kettle				
Microwave Oven				
Oven				
Freezer				
Fridge				
Toaster Oven				
SERVICES				
Clothes Dryer				
Cordless phone				
Effluent system (biocycle)				
Hot water system				
Vacuum cleaner				
Washing Machine				
Water pump				
OTHER				
Mobile phone (charging)				
Iron				
Computer (desk top)				
Computer (Laptop)				
DVD				
Hairdryer				
Stereo				
Television				
Clock Radio				